

## REMARKS

This application has been reviewed in light of the Office Action mailed on December 19, 2002. Claims 1-61 are pending in the application with Claims 1, 13, 18, 21, 22, 24, 32, 36, 42 and 54 being in independent form. By the present amendment, Claims 1, 4, 13, 17, 18, 21, 22, 24, 27, 42 and 54 have been amended and Claims 19 and 21 have been cancelled. No new matter or issues are believed to be introduced by the amendments.

In the Office Action, Claim 1 was objected to for having an informality. The amended Claim 1, reciting in part: "An optical system for reading an optical code,..." is believed to obviate the objection. Accordingly, withdrawal of the objection is respectfully requested.

### **I. Rejection of Claims 1-12, 13-17, 18-20, 22-23, 42-53 and 54-61 Under 35 U.S.C. §112, Second Paragraph**

Claims 1, 13, 18, 22, 42 and 54 were rejected under 35 U.S.C. §112, second paragraph. Claims 1, 13, 18, 22, 42 and 54 have been amended in a manner which is believed to obviate the rejection. The amendments are believed to better define Applicants' invention and obviate the rejections to both the independent Claims 1, 13, 18, 22, 42, and 54 and their dependant Claims 2-12, 14-17, 19-20, 23, 43-53 and 55-61. Accordingly, withdrawal of the rejection is respectfully requested.

### **II. Rejection of Claims 1-6, 9-11, 13-15, 24-30, 42-48 and 51-53 Under 35 U.S.C. §102(b)**

Claims 1-6, 9-11, 13-15, 24-30, 42-48 and 51-53 were rejected under 35 U.S.C. §102(b) as anticipated by U.S. Patent No. 5,864,128 issued to Plesko ("Plesko '128").

Claims 1, 24, 27 and 42 have been amended in a manner which is believed to better define Applicants' invention and to obviate the rejection. Amended Claim 1 recites: "An optical device for use in an optical system for reading an optical code, comprising a unitary

body of optical material having an aperture forming area and a beam phase modifying area both receptive of light from a light source for a focus-free forming of a beam for reading the optical code, said unitary body also having an integrated collection surface for reflecting at least a portion of light returning from the optical code to a photodetector." (Emphasis added)

Claims 13, 24 and 42 contain similar language.

Plesko '128 discloses the use and fabrication of apertures to increase the useable range of the scanning device. Plesko '128 does not disclose or suggest a unitary body having an integrated collection surface for reflecting light returning from the optical code to a photodetector. Accordingly, withdrawal of the rejection under 35 U.S.C. §102(b) with respect to Claim 1, 13, 24 and 42 and allowance thereof are respectfully requested.

Dependent Claims 2-6, 9-11, 14-15, 25-30, 43-48 and 51-53 depend from Claims 1, 13, 24 and 42 and therefore include the limitations of those claims. Therefore, for at least the same reasons given above for Claims 1, 13, 24 and 42, Claims 2-6, 9-11, 14-15, 25-30, 43-48 and 51-53 are believed to be allowable over the cited reference. Accordingly, withdrawal of the rejection under 35 U.S.C. §102(b) with respect to Claims 2-6, 9-11, 14-15, 25-30, 43-48 and 51-53 and allowance thereof are respectfully requested.

### **III. Rejection of Claim 21 Under 35 U.S.C. §102(b)**

Claim 21 was rejected under 35 U.S.C. §102(b) as anticipated by Plesko '128. Claim 21 has been cancelled.

### **IV. Rejection of Claims 7-8, 12, 16-20, 22-23, 32-41 and 49-50 Under 35 U.S.C. §103(a)**

Claims 7-8, 12, 16-20, 22-23, 32-41 and 49-50 were rejected under 35 U.S.C. §103(a) over Plesko '128 in view of U.S. Patent No. 5,602,376 issued to Coleman et al. ("Coleman et al."). Claim 19 has been cancelled and Claim 32 is respectfully traversed.

Claims 7-8, 12, 16-17 and 49-50 depend from independent Claims 1, 13 and 42 and therefore include the limitations of those claims. Therefore, for at least the same reasons given above for Claims 1, 13 and 42, Claims 7-8, 12, 16-17 and 49-50 are believed to be allowable over the cited references, taken alone or in any proper combination. Accordingly, withdrawal of the rejection under 35 U.S.C. §103(a) with respect to Claims 7-8, 12, 16-17 and 49-50 and allowance thereof are respectfully requested.

Claims 22, 32 and 36 make no reference to the use of a Brewster's Angle surface on the unitary body material. The amended Claim 22 recites in part: "...a collection surface for collecting light reflected from said indicia, wherein said collection surface substantially transmits a P-polarized component and a portion of an S-polarized component of said reflected light and redirects an appropriate amount of the remaining S-polarized component of said reflected light to a photodetector to enable said optical system to read said indicia."

(Emphasis added). Similar language is found in Claim 36. Claim 32 makes no mention of any angled surface being employed.

Claim 18 has been amended in a manner which is believed to better define Applicants' invention and to obviate the rejection. Claim 18 recites in part: "...a collection surface for collecting light reflected from said indicia, wherein said collection surface substantially transmits a P-polarized component and a portion of an S-polarized component of said reflected light and redirects an appropriate amount of the remaining S-polarized component of said reflected light to a photodetector to enable said optical system to read said indicia."

(Emphasis added)

Plesko '128 does not disclose or suggest the use of a Brewster's Angle. Coleman et al. discloses the use of the Brewster's Angle as a means of eliminating the "exit reflection"

normally exhibited at other angles. For this behavior to occur the emitted light source needs to be polarized as further disclosed by Coleman et al., since, at the Brewster's Angle, light of one polarization is transmitted through the medium while light having a 90° polarization relative to the transmitted polarization is reflected.

In contrast, Applicants claim, inter alia, the use of a surface of the unitary body to redirect a appropriate amount of the S-polarized component of the reflected light to the photodetector, while substantially transmitting the P-polarized component and remaining portion of the S-polarized component away from the detector. The Brewster's Angle will not fulfill this requirement. Brewster's Angled surfaces will reflect 100% of the S-polarized light and transmit only the P-polarized component. However, a multitude of other oblique angles will additionally transmit various amounts of the S-polarized component. In fact, Applicants specifically make mention within paragraph 34 of the specification of the use of non-Brewster's Angle oblique angles. Accordingly, withdrawal of the rejection under 35 U.S.C. §103(a) with respect to Claims 18, 22, 32 and 36 and allowance thereof are respectfully requested.

Claims 20, 34-35 and 39-41 disclose mount-points for a circuit board which is not disclosed or suggested by Plesko '128 and Coleman et al., taken alone or in any proper combination. Additionally, Claims 20, 34-35 and 39-41, as well as Claim 37, depend from independent Claims 18, 32 and 36 and therefore include the limitations of these claims. Therefore, for at least the same reasons given above for Claims 18, 32 and 36, Claims 20, 34-35, 37 and 39-41 are believed to be allowable over the cited references, taken alone or in any proper combination. Accordingly, withdrawal of the rejection under 35 U.S.C. §103(a) with respect to Claims 20, 34-35, 37 and 39-41 and allowance thereof are respectfully requested.

## **V. Rejection of Claim 31 Under 35 U.S.C. §103(a)**

Claim 31 was rejected under 35 U.S.C. §103(a) over Plesko '128 in view of U.S. Patent No. 4,105,332 issued to Hohne et al. ("Hohne et al."). Claim 31 depends from independent Claim 24, and includes the limitations of Claim 24. Therefore, for at least the same reasons as given for Claim 24, Claim 31 is believed to be allowable over the cited references, taken alone or in any proper combination. Accordingly, withdrawal of the rejection under 35 U.S.C. §103(a) with respect to Claim 31 and allowance thereof are respectfully requested.

## **VI. Rejection of Claims 54-60 Under 35 U.S.C. §103(a)**

Claims 54-60 were rejected under 35 U.S.C. §103(a) over Plesko '128 in view of U.S. Patent No. 5,933,288 issued to Plesko ("Plesko '288").

Claim 54 has been amended in a manner which is believed to better define Applicants' invention and to obviate the rejection. Claim 54 recites: "A wand reader for reading an optical code by projecting a focused beam of light at said optical code and collecting return light reflected from said optical code, the reader comprising: a light source for emitting light energy; a unitary body for focusing said light energy into the focused light beam, said unitary body having an output surface perpendicular to said focused light beam through which said focused light beam can be transmitted toward said optical code; a collector surface positioned for directing at least a portion of said returning beam to a photodetector; and a detector for receiving a portion of the return light reflected from said optical code and producing an electrical signal corresponding to the intensity of said return light, wherein said light source, said unitary body and said detector are situated in an antenna for use with a wireless transceiver of a telephone or personal digital assistant." (Emphasis added)

Although Plesko '128 in view of Plesko '288 suggests a light source, unitary body and detector situated in an antenna, neither reference, taken alone or in any proper combination, discloses or suggests the inclusion of a collector surface positioned at an oblique angle with relation to a path of a returning beam for directing at least a portion of said returning beam to a photodetector. Therefore, for at least the reasons given above, Claim 54 is believed to be allowable over the cited references, taken alone or in proper combination. Accordingly, withdrawal of the rejection under 35 U.S.C. §103(a) with respect to Claim 54 and allowance thereof are respectfully requested.

With respect to Claim 59, Plesko '128 discloses the use of a translucent, scattering region to reflect a portion of the laser preventing that portion from propagating to the targeted indicia. Applicants' Claim 59, however, specifically claims a diverging region for diverging, i.e., refracting, a portion of the laser away from the targeted indicia and hence, is not disclosed or suggested by either Plesko '128 or Plesko '288 taken alone or in proper combination.

Further, Claim 59, as well as Claims 55-58 and 60, depend from Claim 54 and therefore include the limitations of this claim. Therefore, for at least the same reasons given above for Claim 54, Claims 55-60 are believed to be allowable over the cited references, taken alone or in any proper combination. Accordingly, withdrawal of the rejection under 35 U.S.C. §103(a) with respect to Claims 55-60 and allowance thereof are respectfully requested.

## **VII. Rejection of Claim 61 Under 35 U.S.C. §103(a)**

Claim 61 was rejected under 35 U.S.C. §103(a) over Plesko '128 as modified by Plesko '288 as applied to Claim 58, and in further view of Coleman et al.

Claim 61 depends from Claim 54 and therefore includes the limitations of this claim. Therefore, for at least the same reasons given above for Claim 54, Claim 61 is believed to be

allowable over the cited references, taken alone or in proper combination. Accordingly, withdrawal of the rejection under 35 U.S.C. §103(a) with respect to Claim 61 and allowance thereof are respectfully requested.

### **VIII. Conclusions**

In view of the foregoing amendments and remarks, it is respectfully submitted that all claims presently pending in the application, namely, Claims 1-18, 20 and 22-61, are believed to be in condition for allowance and patentably distinguishable over the art of record.

Attached hereto and identified as VERSION WITH MARKINGS TO SHOW CHANGES MADE is a copy of the amended claims detailing the amendments made thereto.

If the Examiner should have any questions concerning this communication or feels that an interview would be helpful, the Examiner is requested to call Applicants' undersigned attorney at the number indicated below.

Respectfully submitted,



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**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

**IN THE CLAIMS:**

Claims 1, 4, 13, 17, 18, 22, 24, 27, 42 and 54 showing amendments made:

1. (Amended) An optical device for use in [a] an optical system for reading an optical code, comprising a unitary body of optical material having an aperture forming area and a beam phase modifying area both receptive of light from a light source for [the] a focus-free forming of a beam for reading the optical code, said unitary body also having an integrated collection surface for reflecting at least a portion of light returning from the optical code to a photodetector.
  
4. (Amended) The device according to claim 3, wherein the outer region of the outer surface of the unitary body, also referred to as the collection surface, is a beam splitter.
  
13. (Amended) A multipurpose unitary body for supporting a laser source and collecting light reflected from a target in an optical system, the optical system [capable of] for projecting and collecting laser light in order to read an encoded indicia, said multipurpose unitary body comprising: a laser support region for supporting said laser source; and at least one collection surface for collecting light reflected from said indicia.
  
17. (Amended) The multipurpose unitary body of claim 13 wherein at least one collection surface can function as a [Brewster's angle] beam splitter.



18. (Amended) A multipurpose unitary body for supporting a laser source and collecting light reflected from a target in an optical system, the optical system [capable of] for projecting a focused beam of laser light and collecting reflected light in order to read an encoded indicia, said multipurpose unitary body comprising:

a laser support region for supporting said laser source;

an output surface substantially perpendicular to said beam for transmitting said laser light; and

a collection surface [having an oblique angle relative to said beam] for collecting light reflected from said indicia, wherein said collection surface substantially transmits a P-polarized component and a portion of an S-polarized component of said reflected light and redirects an appropriate amount of the remaining S-polarized component of said reflected light to a photodetector to enable said optical system to read said indicia.

22. (Amended) A unitary body for collecting light reflected from a target in an optical system, the optical system [capable of] for transmitting a beam of laser light and collecting reflected light in order to read an indicia, said unitary body comprising: an output surface substantially perpendicular to said beam for transmitting said laser light; and a collection surface [having an oblique angle relative to said beam] for collecting light reflected from said indicia, wherein said collection surface substantially transmits a P-polarized component and a portion of an S-polarized component of said reflected light and redirects an appropriate amount of the remaining S-polarized component of said reflected light to a photodetector to enable said optical system to read said indicia.

24. (Amended) In a method for reading optical codes, a method of forming a beam of light comprising the steps of:

emitting light from a light source; and

passing the light through a unitary body of optical material which forms an aperture using an aperture forming area and modifies a beam phase using a beam phase modifying area to effect a focus free forming of a beam for reading the optical code, said unitary body further collects reflected light received from the optical code and directs at least a portion of said received light to a photodetector using a collection area.

27. (Amended) The method according to claim 26, wherein the outer region of the outer surface of the unitary body, also referred to as the collection area, is a beam splitter.

36. (Amended) A method of generating a signal from a target, comprising the steps of:

focusing P-polarized laser light from a laser source along an optical path through a unitary body of optical material in a bar code reader to said target;

redirecting at least a part of an S-polarized component of light reflected from said target using at least one surface of said unitary body, said surface [having an oblique angle relative to said optical path] further substantially transmits the P-polarized component and the remaining S-polarized component of said reflected light; and

detecting at least a part of said redirected S-polarized component of light reflected from said target.

42. (Amended) An optical code reader [capable of ] for reading an optical code by projecting laser light at said indicia and collecting light reflected from said optical code, the optical code reader comprising:

a pen-shaped housing;

a laser source for emitting said laser light;

a unitary body for focusing said light into a beam, said unitary body having an output surface perpendicular to said beam through which said beam can be transmitted toward said optical code;

a collector surface positioned for directing at least a portion of said returning beam to a photodetector; and

a detector for receiving a portion of light reflected from said optical code by said collector surface and producing an electrical signal corresponding to the intensity of said reflected light, wherein said laser source, said unitary body, said collector and said detector are situated in said housing.

54. (Amended) A wand reader [capable of] for reading an optical code by projecting a focused beam of light at said optical code and collecting return light reflected from said optical code, the reader comprising:

a light source for emitting light energy;

a unitary body for focusing said light energy into the focused light beam, said unitary body having an output surface perpendicular to said focused light beam through which said focused light beam can be transmitted toward said optical code;

a collector surface positioned for directing at least a portion of said returning beam to a photodetector; and

a detector for receiving a portion of the return light reflected from said optical code and producing an electrical signal corresponding to the intensity of said return light, wherein said light source, said unitary body and said detector are situated in an antenna for use with a wireless transceiver of a telephone or personal digital assistant.